

CLAIMS

1 1. A method in a computer system for determining a diameter of a broadcast
2 channel, the broadcast channel having computers, each computer connected to at least three
3 neighbor computers, the method comprising:

4 receiving a message from a neighbor computer;

5 identifying a distance traveled from the received message;

6 setting an estimated diameter based on the identified distance traveled amount;

7 incrementing the distance traveled in the message; and

8 sending the message with the incremented distance traveled to a neighbor
9 computer.

1 2. The method of claim 1 wherein the setting of the estimated diameter sets the
2 estimated diameter to the distance traveled whenever the identified distance traveled is
3 greater than the current estimated diameter.

1 3. The method of claim 1 wherein the computers of the broadcast channel form an
2 m-regular and m-connected graph.

1 4. The method of claim 3 wherein m is 4.

1 5. The method of claim 1 wherein each computer is connected to its neighbor
2 computers via a point-to-point connections.

1 6. The method of claim 1 including when the estimated diameter is set,
2 broadcasting a message indicating the new estimated diameter.

1 7. The method of claim 1 including:

2 receiving a message indicating a new estimated diameter; and

3 when the new estimated diameter is greater than the currently estimated
4 diameter, setting the estimated diameter to the new estimated diameter.

1 8. The method of claim 1 including:

2 receiving a message indicated to reset the estimated diameter to a new
3 estimated diameter; and

4 setting the estimated diameter to the new estimated diameter.

1 9. A method of disconnecting a first computer from a second computer, the first
2 computer and the second computer being connected to a broadcast channel, the method
3 comprising:

4 when the first computer decides to disconnect from the second computer, the
5 first computer sends a disconnect message to the second computer; and

6 when the second computer receives the disconnect message from the first
7 computer, the second computer broadcasts a connection port search message to find a third
8 computer to which it can connect.

1 10. The method of claim 9 wherein the second computer receives a port connection
2 message indicating that the third computer is proposing that the third computer and the
3 second computer connect.

1 11. The method of claim 9 wherein the first computer disconnects from the second
2 computer after sending the disconnect message.

1 12. The method of claim 9 wherein the broadcast channel is implemented using the
2 Internet.

1 13. The method of claim 9 wherein each computer connected to the broadcast
2 channel is connected to at least three other computers.

1 14. The method of claim 13 wherein the computers and their connections form an
2 m-regular graph.

1 15. The method of claim 9 wherein the first computer and second computer are
2 connected via a TCP/IP connection.

1 16. A method for disconnecting a first computer from a second computer, the
2 computers being connected to a broadcast channel, the method comprising:

3 connecting the first computer to a second computer;

4 attempting to send a message from the first computer to the second computer;

5 and

6 when the attempt to send the message is unsuccessful, broadcasting from the
7 first computer a connection port search message indicating that the first computer needs a
8 connection.

1 17. The method of claim 16 including:

2 when a third computer receives the connection port search message and the
3 third computer also needs a connection, sending a message from the third computer to the
4 first computer proposing that the first computer and third computer connect.

1 18. The method of claim 17 including:

2 when the first computer receives the message proposing that the first computer
3 and third computer connect, sending from the first computer to the third computer a message
4 indicating that the first computer accepts the proposal to connect the first computer to the
5 third computer.

1 19. The method of claim 16 wherein each computer connected to the broadcast
2 channel is connected to at least three other computers.

1 20. The method of claim 19 wherein the computers and connections of the
2 broadcast channel form an m-regular graph.

1 21. The method of claim 19 wherein the computers and connections of the
2 broadcast channel form an m-connected graph.

1 22. The method of claim 16 wherein the broadcasting includes sending the
2 message to each computer to which the first computer is connected.

1 23. A computer-readable medium containing instructions for controlling
2 disconnecting of a computer from another computer, the computer and the other computer
3 being connected to a broadcast channel, comprising:

4 a component that, when the computer decides to disconnect from the other
5 computer, the computer sends a disconnect message to the other computer; and

6 a component that, when the computer receives a disconnect message from
7 another computer, the computer broadcasts a connection port search message to find a
8 computer to which it can connect.

1 24. The computer-readable medium of claim 23 including:

2 a component that, when the computer receives a connection port search
3 message and the computer needs to connect to another computer, sends to the computer that
4 sent the connection port search message a port connection message indicating that the
5 computer is proposing that the computer that sent the connection port search message
6 connect to the computer.

1 25. The computer-readable medium of claim 24 including:

2 a component that, when the computer receives a port connection message,
3 connecting to the computer that sent the port connection message.

1 26. The computer-readable medium of claim 23 wherein each computer connected
2 to the broadcast channel is connected to at least three other computers.

1 27. The computer-readable medium of claim 23 wherein the computers and their
2 connections form an m-regular graph.

1 28. The computer-readable medium of claim 23 wherein the computers are
2 connected via a TCP/IP connection.

1 29. The computer-readable medium of claim 23 wherein the computers that are
2 connected to the broadcast channel are peers.

1 30. The computer-readable medium of claim 23 wherein the broadcast channel is
2 implemented using the Internet.